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Conformational probes in glassy polymers: Free volume and relaxation transitions (FT-IR spectroscopy)

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Abstract

The method of conformational probes has been developed. The conformational mobility of probes introduced into poly(methyl methacrylate) (PMMA) and having different sizes of rotational fragments (Vp ≠) has been investigated. There is a correlation between the freezing temperature of probe conformational transitions (Tf) and Vp ≠. These data have been considered within the frameworks of the free volume theory and the relaxational transitions. Conformational mobility of probes in poly(vinyl trimethylsilane) (PVTMS) and poly(trimethylsilyl propyne) (PTMSP) with a large free volume fraction has been studied.

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Keywords

Conformational equilibrium, Free volume, Infrared spectra, Internal dynamics, Relaxation transitions